Research Note

NORTHERN ROCKY MOUNTAIN
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PROMISING FORAGE SPECIES AND SEASONS FOR RESEEDING NORTHEASTERN WASHINGTON SCABLANDS

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Channeled-scablands are characteristic of approximately one-half of the 1.5 million acres of land in Lincoln County and of somewhat smaller portions of the 1.4 million and 1.1 million acres in Whitman and Spokane Counties of northeastern Washington. Loss of much loessial surface soil by washing and blowing has exposed underlying basalt and reduced the productivity of this land. Intermingled patches of exposed basalt and erosion pavement and small remnant mounds of soil 12 to 18 inches deep, locally called "biscuits," constitute the true "scab" areas. Of the three recognized soil situations in this area, only the marginal soils lying between the true scablands and the fertile wheatlands offer reseeding possibilities. Past grazing and cropping practices have left only a vestige of the climax vegetation. These relicts are associated with inferior weed species, low-value annual grasses, and browse species over large acreages. Although of lower fertility than the wheatlands, much of the marginal land area appears capable of greater herbage production.

To determine the possibilities of increasing forage production on these marginal soils through reseeding, the Northern Rocky Mountain Forest and Range Experiment Station, in cooperation with Herbert Armstrong, a local rancher, the Harrington Soil Conservation District, and the Washington Agricultural Experiment Station, has been conducting season-of-planting and species adaptability tests since early 1950 in Lincoln County. Although further tests are needed, results to date provide preliminary guides to the successful rehabilitation of these lands by artificial reseeding.

DESCRIPTION OF THE AREA

The study area is located near Harrington, Washington, at an elevation of 2,200 feet on the marginal soil type described. The soil has been classified as a Hesseltine loam (1).[2/] The surface layer is a brown loam extending to a depth of about 6 inches. This is underlain by 3 to 5 feet of rocky, loam subsoil. Beneath the subsoil is the basaltic bedrock. Lack of organic matter and excessive drainage discourage farming of this soil. The area has been

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1/ Acknowledgment is made to Grant A. Harris who initiated this study.
2/ Numbers in parentheses refer to Literature Cited.

plowed, cropped for several years, and abandoned. Big sagebrush, cheatgrass, needleandthread grass, Sandberg bluegrass, plantain, and sedge had reinvaded in varying amounts after abandonment. Annual precipitation in this locality approximates 11½ inches, about half of which occurs during the winter months, November through February.

THE STUDY

One plot of each of several species and strains was planted on each of three dates in 1950, spring and early and late fall. Each plot contained three rows 18 feet long, spaced 2 feet apart. Soil preparation consisted of plowing, disking, and harrowing. All planting was done with a Planet Jr. seeder. Competing weeds were removed by hand on two different dates during the growing season. Vigor and distribution of plants in the rows of each species were observed beginning with seedling emergence and continuing at intervals until growth was complete. Fall regrowth was observed in the same manner. The plantings and observations were repeated in 1951. These observations are the basis for this research note.

RESULTS

Planting Seasons

The 1950 spring plantings produced better stands than either the early or late fall plantings in 1950. Spring plantings in 1951 were also highly successful. Of all the species planted in the spring of 1950, 17 produced excellent stands, 6 produced somewhat less satisfactory stands, 12 were considered unsatisfactory, and 4 failed completely (table 1). Similarly, very good stands of vigorous plants were obtained from 18 of the 21 species planted in the spring of 1951. Of the 25 species planted in early fall 1950, 6 species produced very thin stands of plants in poor vigor, 8 were near failures, and 11 failed completely. Of 20 species planted in late fall 1950, 8 produced poor stands, 7 were near failures, and the remaining 5 failed. Crested wheatgrass produced the best stand of all species planted in the fall. Figure 1 shows typical crested wheatgrass stands resulting from spring and fall plantings.

Table 1. Stands of forage plants obtained from spring, early fall, and late fall plantings

Stand rating	Spring		Early fall	Late fall
	1950	1951	1950	1950
Excellent	17	18		
Very good				
Good	6	3		
Poor			6	8
Very poor	12		8	7
Failure	4		11	5
Total number tested	39	21	25	20